Temporary Obturator Neuropathy Suspected as a Result of Obturator Fossa Edema After Debulking Surgery

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SUMMARY

Objective: Obturator nerve injury is a rare complication of obstetric or gynecologic surgery. We present a rare case of obturator nerve injury due to edematous compression of the obturator fossa during the debulking operation.

Case Report: A 49-year-old, gravida 2, para 2, woman complained of left thigh weakness after a debulking operation for left-side ovarian cancer. The left thigh weakness was noted on the first postoperative day due to loss of thigh adductor control. Left obturator nerve injury was, therefore, suspected after consultation with a neurologist. On the third postoperative day, electromyography was arranged, which revealed a lesion on the left obturator nerve at the pelvis. The procedures employed in the operation were reviewed: neither obturator lymph node dissection nor incision of the obturator sheath had been performed. Obturator fossa edema leading to left obturator nerve compression was suspected. The patient received bedside exercise after hospitalization and regular home exercise after discharge. Six weeks after the operation, the left thigh weakness had improved and the patient could walk freely without any assisting devices.

Conclusion: Although obturator nerve injury is a rare complication of gynecologic surgery, one should always be alert to the risk of nerve injury if a patient complains of muscle weakness in the thigh. If the diagnosis is confirmed, conservative physiotherapy and rehabilitation can contribute to satisfactory results. [*Taiwanese J Obstet Gynecol* 2005;44(4):378–380]

Key Words: debulking surgery, obturator fossa edema, obturator nerve injury

Introduction

Nerve injury is an infrequent complication of gynecologic surgery. The most frequently reported injury is to the femoral nerve. Among nerve injuries, obturator nerve injury is thought to be infrequent. Obturator nerve injury usually presents with sensory loss in the upper medial thigh and motor weakness in the hip adductors. In a review of cases in the literature, we found that postoperative obturator nerve injury is very rare in gynecologic practice. We report a case of left obturator nerve injury due to obturator fossa edema; early diagnosis and appropriate rehabilitation resulted in a complete recovery.

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Received: March 30, 2005
Revised: July 8, 2005
Accepted: July 14, 2005

Case Report

A 49-year-old, gravida 2, para 2, woman complained of abdominal fullness. She visited a local hospital for help, and a diagnosis of hydrosalpinx was made. She came to our outpatient clinic for further evaluation. A left-

side echogenic complex mass measuring 9.12 × 7.46 cm was found by ultrasonography, and a left ovarian tumor was suspected. The CA125 level was 30.43 U/mL.

After explaining the risk of malignancy to her, she was admitted for further treatment. An initial laparoscopic oophorectomy was performed, and a left ovarian tumor was excised and removed through a mini incision site. The ovarian tumor had solid content and irregular contours, so was sent for frozen section. The pathology report was ovarian serous adenocarcinoma. After explaining this and discussing with her family, an advanced-stage operation was performed. Transabdominal hysterectomy, bilateral salpingo-oophorectomy, external iliac lymph node sampling, and omentectomy were performed, but obturator sheath separation and obturator lymph node excision were not. The operation was completed smoothly.

Unfortunately, left thigh weakness was noted on the first postoperative day. The patient could not cross her left thigh due to loss of adductor control. After consulting with a neurologist, left obturator nerve injury was suspected. Results of the electrodiagnostic evaluative electromyography (EMG) revealed active denervation at rest and the absence of voluntary motor unit potential in the left adductor longus, adductor magnus, and gracilis muscles. A left obturator nerve lesion at the pelvis was confirmed. The patient began to receive bedside exercise during hospitalization and regular home exercise after discharge. Six weeks after the operation, the left thigh weakness had improved and the patient was ambulatory.

Discussion

Damage to the obturator nerve (L2–4) has been associated with radical pelvic surgery, endometriosis, paravaginal defect repair [1,2], and pelvic lymphadenectomy [1,3]. Obturator nerve injury in the form of neuropraxia, axonotmesis and neurotmesis causes morbidity in the form of pain, sensory loss to the medial thigh, and inconsistent motor loss to the adductor muscle group [4]. In the present case, as the obturator nerve innervates the adductor muscles of the thigh, the weakness of thigh adduction alerted us to the possibility of obturator nerve injury on the day following the operation. EMG revealed active denervation and the absence of voluntary movement. Neuropraxia is the physiologic interruption of an anatomically intact nerve. In this condition, there is minimal damage. The axons are intact but conduction is lost because of segmental demyelination. In fact, obturator nerve compression is a rare condition, and injury to the obturator nerve may occur at the point where the nerve passes through the obturator canal.

In gynecology, the obturator nerve might be damaged by intrapelvic tumor compression, radical hysterectomy with pelvic lymph node dissection, or debulking surgery [5,6]. In addition, obturator nerve injury can also occur at the time of paravaginal defect repair, performed to address a symptomatic lateral cystocele. When dissecting within the space of Retzius, the surgeon should identify and expose the ipsilateral obturator neurovascular bundle to prevent nerve injury [7]. To minimize the risk of obturator nerve injury when dissecting the obturator fossa, the obturator nerve should be identified and exposed before performing the operative procedure because the lymph-bearing tissues of the obturator space obscure the location of the obturator nerve and predispose it to injury [7].

In this patient, removal of the fibrovascular or lymph-bearing tissue of the obturator space was not carried out. The cause of the obturator nerve compression may have been tissue swelling with blood re-supplementation after removing the bulky mass, which contributed to the edema of the obturator fossa. In our experience, gentle placement of a retractor for medial or lateral traction on the external iliac artery and vein permits access to the obturator space, and decreases the chance of obturator nerve injury [8,9]. In addition, when a bleeding site is noted within the obturator space, hemostasis must be carefully performed to prevent a hematoma, which may otherwise compress the space and affect nerve function [8]. In our patient, neither obturator nerve traction nor a hematoma in the obturator space was found during the operation. It was highly likely that tissue swelling affected obturator nerve function.

When obturator nerve injury is clinically apparent, EMG studies can be helpful in ascertaining obturator deficit distribution, and ruling out unrecognized lumbosacral and femoral neuropathies which can clinically mimic obturator nerve injury [10]. Among the categories of nerve injury, our patient could be diagnosed with neuropraxia, which is a nerve contusion or compression and is a functional injury [3]. Fortunately, this type of obturator nerve injury usually responds well to physical therapy. Complete recovery of the damaged part of the obturator nerve can be expected to occur within 4–6 weeks in patients who are receiving regular physiotherapy [11].

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